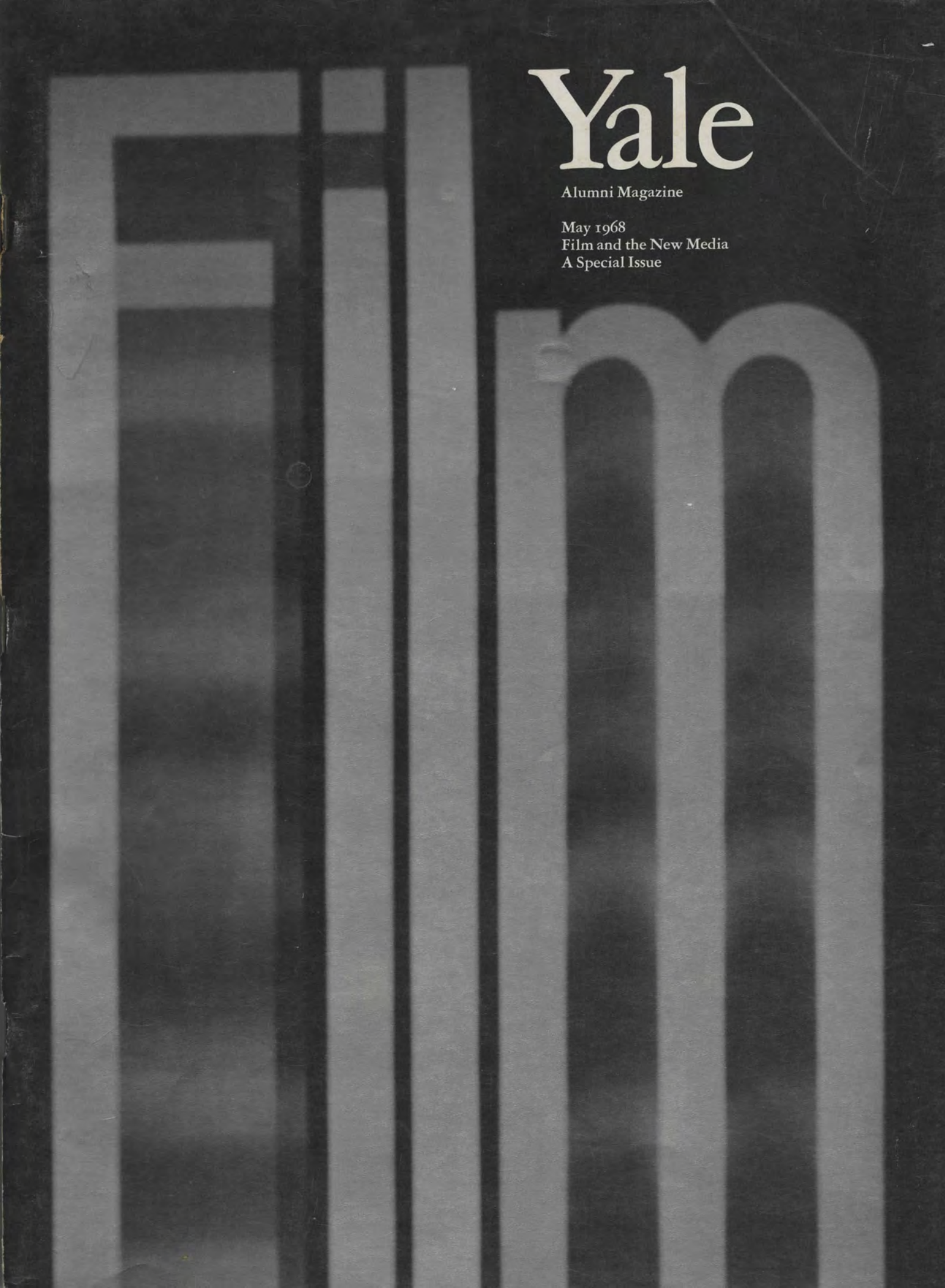

Yale
Alumni Magazine
May 1968
Film and the New Media
A Special Issue
Film



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Editor:
Wm. Hamilton Jones, '64
Associate editors:
Rita D. Berkson
Joel Katz, '65
Assistant editor:
Molly Willcox
Class notes editor:
Helen Davie
Executive assistant:
Margaret Lawrence

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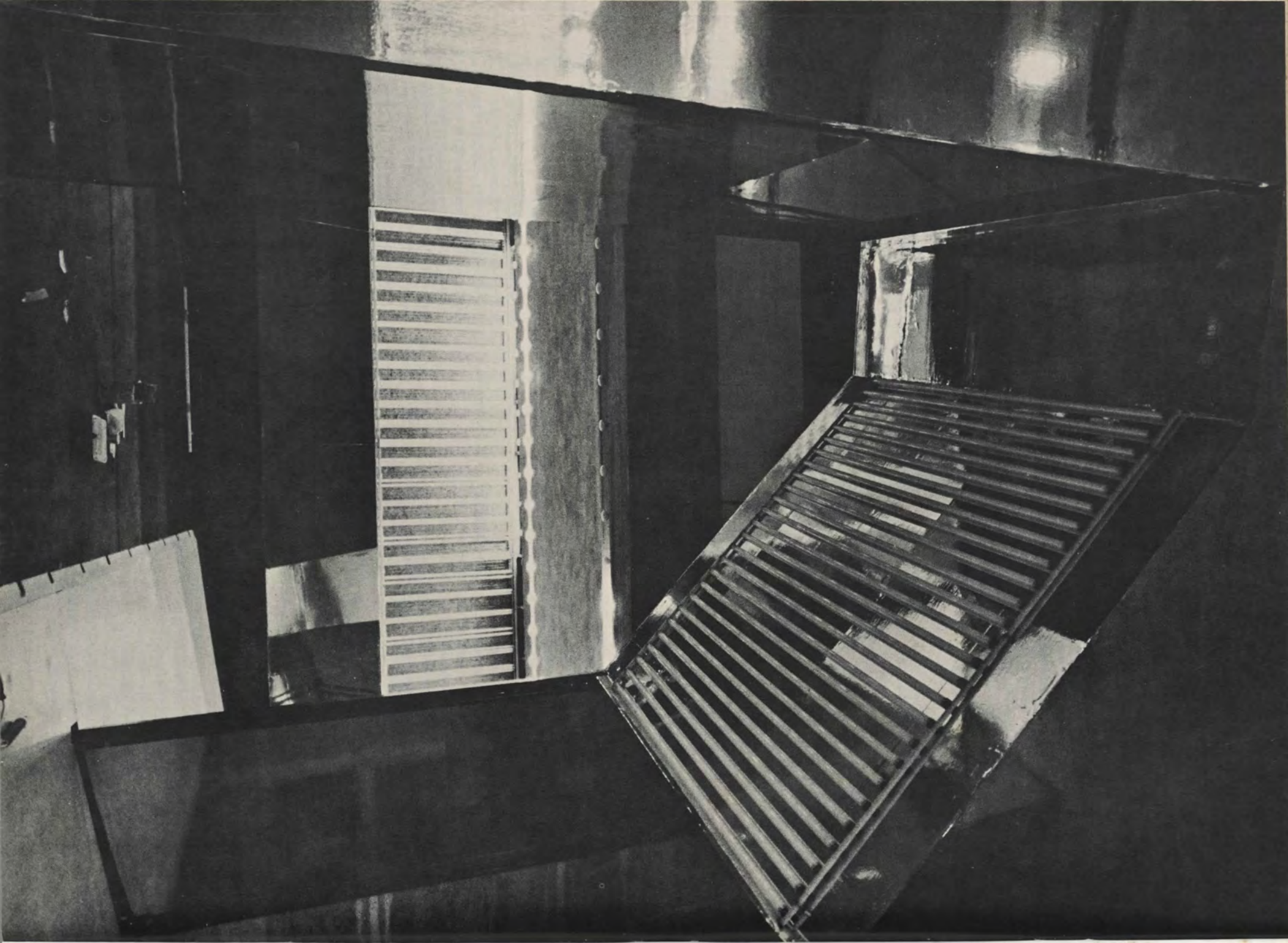
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PULSA: LIGHT AS TRUTH

Pulsa is a continually shifting, total environment of light and sound. Banks of fluorescent bulbs glow softly, punctured occasionally by a stabbing strobe light. Light dances uncertainly up and down the fluorescent tubes and moves across walls with apparent abandon. The physical boundaries of the exhibition space dissolve; the security of every inch of floor space is unsure and the limits of the room and ceiling are ambiguous. Beneath everything is the pulsation of electronic sound, responding to the same signals as the lights and seeming at times to have a physical presence.

Pulsa is one facet of Project Argus, a mixed-media exhibition currently occupying the second floor of the School of Art and Architecture. Combined with the light and sound show are a massive architectural structure and a film exhibition.

"Project Argus was undertaken with the idea that the School should provide an open-ended experimental atmosphere," says Acting Dean Howard Weaver. "The project was possible because a lot of people came together to deal in different ways with the same set of issues."

The concerns which eventually culminated with Argus were first discussed around the beginning of the year. With the acquisition of the Griggs Film Collection, the School wanted to present a dramatic introductory screening. Not unnaturally, the first question was whether the Art and Architecture School's exhibition space would provide a suitable setting.

The department of architecture, meanwhile, had been considering ways to adapt the space to provide a wider variety of exhibition alternatives. Faced with the prospect of a film show, they set about exploring possible designs.

And, since Jack Tworkov, chairman of the art department, had planned an exhibition of the light show, the Pulsa group was asked if they could accommodate their apparatus to the proposed design.

Planning for Project Argus was completed by late February and construction began. Materials for the structure and the Pulsa installation were donated by several companies and the actual work of construction was undertaken by students, many of whom worked straight through the spring recess. A boat-like structure was built across the exhibition area—"bringing the space down to a human scale," in the words of one student—and covered with mylar, a plastic-based reflective material not unlike tin foil.

Contained within the structure were the control system for Pulsa and seven movie projectors, threaded with closed loops of film selected from the Griggs Collection.

During the early performances of Argus, it was the light and sound show that provoked the most comment. Many people, in the cocktail-party atmosphere of the first showings, and perhaps intimidated by such total abstraction of the environment, could muster only a non-committal response, "It's interesting." But especially for students of the School, Pulsa represents an important and exciting step. Said one: "What they're getting at here is time through rhythm. Not the tap-your-foot kind of rhythm, but a visual rhythm of light. If you hang in long enough, you begin to lift off."

The experimentation which grew into Pulsa began in the fall of 1966, when David MacIver Rumsey, '66, a student filmmaker, rented a loft in downtown New Haven. Soon after, Rumsey discovered that he shared aesthetic concerns with Michael Cain and Patrick Clancy, two graduate students in the painting department of the School of Art and Architecture, and Bill Duesing, '64; the four decided to collaborate on a sustained project which would integrate various media. The objective they agreed upon, as Cain recalls, was "to transcend single-sensory inputs," and the media they chose to work with were light and sound.

Experimenting with light and sound in a serious way requires a dazzling array of complex, and expensive, electronic equipment. Limited by funds, the group haphazardly assembled an occasionally compatible collection of sound devices: turntable, amplifiers, tape deck, and the modulators necessary to make their strings of incandescent bulbs respond to the pitch and volume of their record music or taped sounds. But they felt that their system was too primitive, since it was limited primarily to brightening the lights when the music got louder.

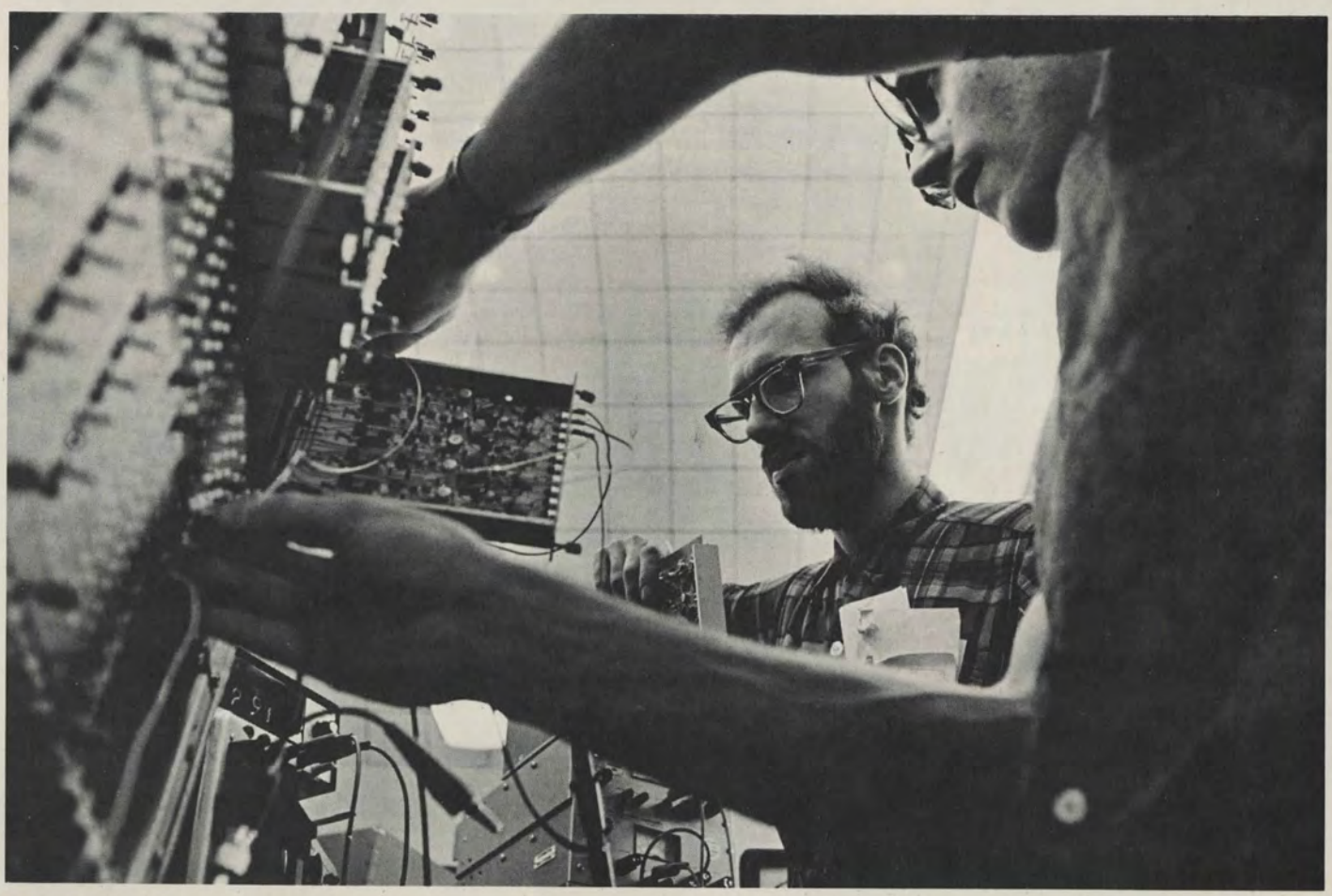
In November, the group acquired what they call "a classical electronic music generator"—a system of electronic components which can be manipulated to create its own abstract sounds—which made it possible for them to improvise light patterns by manufacturing the appropriate sound-impules. The freedom from records and tape was significant, and the banks of oscillators and light bulbs began to grow as a consequence of repeated trips to an army surplus warehouse.

Not surprisingly, the specific kinds of equipment assembled in the loft greatly influenced the nature of the experiments. "Working in terms of an *environment* was

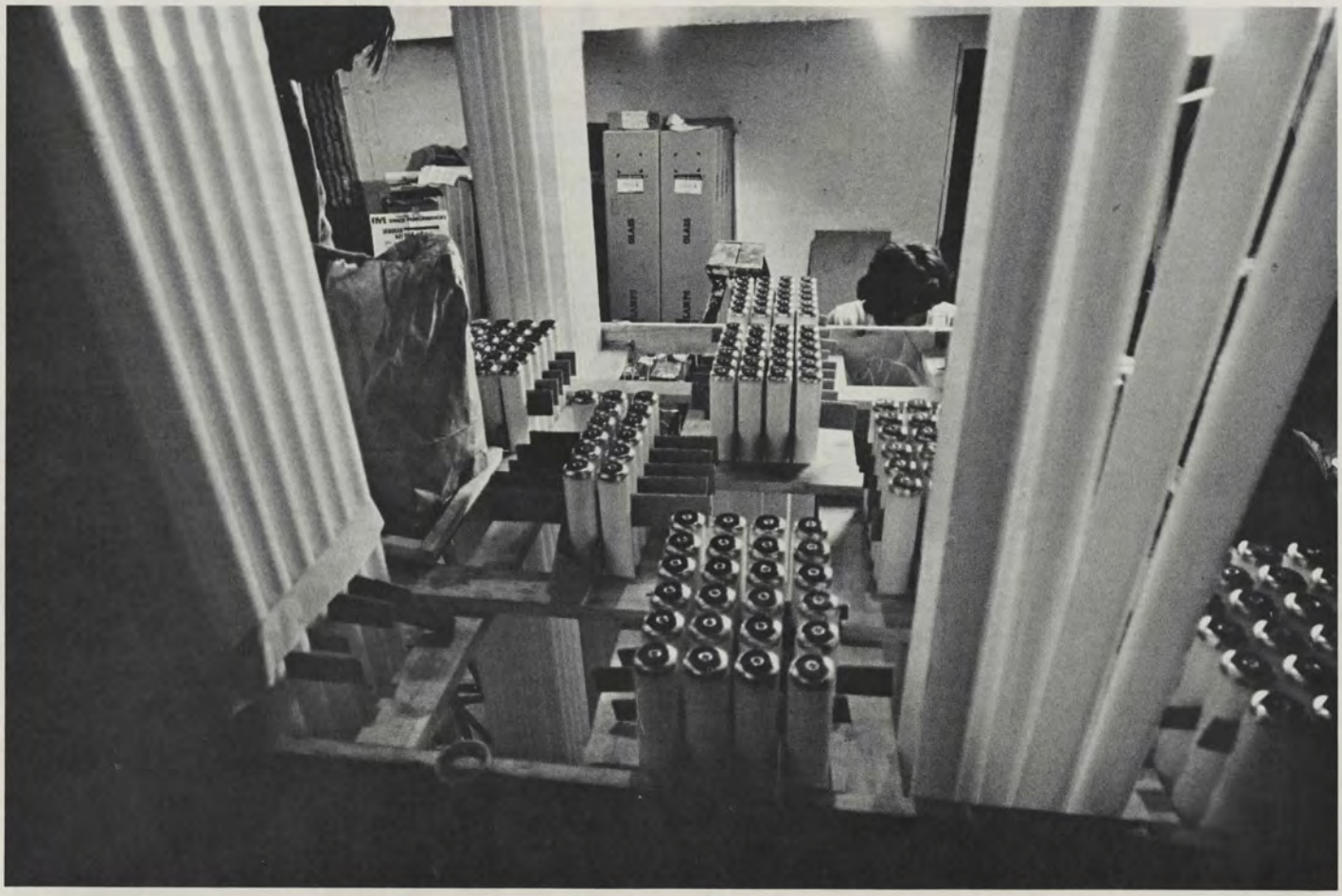
Facing page. The Pulsa installation in the exhibition space of the School of Art and Architecture the night before the first performance. In the foreground is the mylar-clad structure housing film projectors and Pulsa's control system.

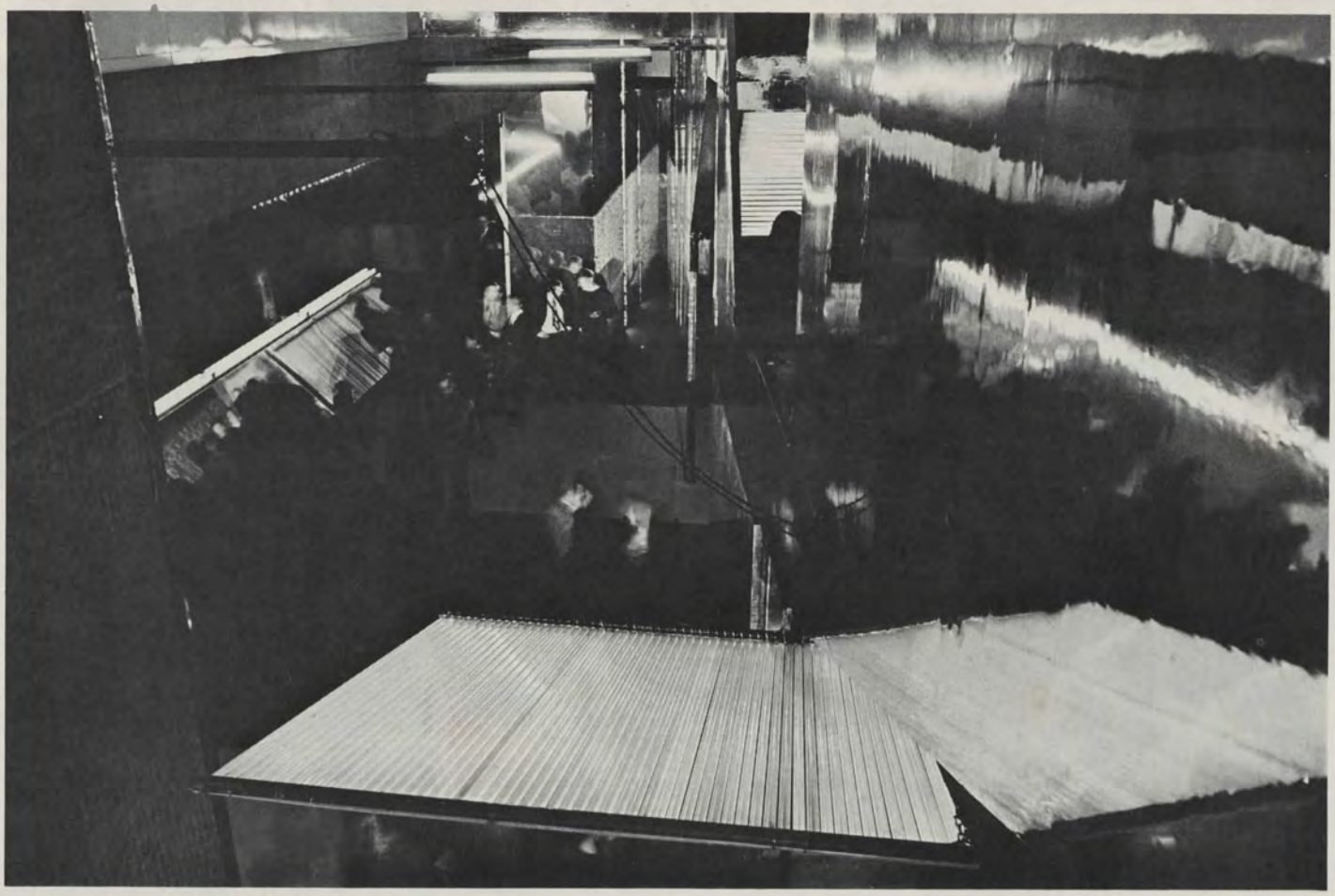
Following pages. Top left, Rumsey capping the fluorescent lamps used in the performance. A plexiglas cylinder, open at both ends, is placed around the top of each lamp; epoxy is poured in, enclosing a metallic lead to conduct electricity. Bottom left, Peter Kindlmann checking out the circuitry of Pulsa's control system in the electronics laboratory as Paul Fuge tests connections. Right, Michael Cain and Bill Duesing stretch the huge mylar panels that complement the appearance of the central structure.











a purely pragmatic decision," says Rumsey. "Thinking very concretely about utilizing the space we were in seemed the best way of organizing the particular gear we had around."

Experimentation during the winter and spring of 1966–67 took several forms. Initially, it was confined to exploring the range of the equipment: what kind of sound patterns could be produced and what their translation into light would look like. But by the spring, the four had converted from incandescent to fluorescent bulbs. In terms of effect, the change was from point-sources of light to fields of light. The transition was motivated by their discovery that the fluorescent lamps were more responsive to the subtle modulations and shifts in electronic signals that they had learned how to produce. Point-source light was retained, however, in the form of strobe-light, which provided sharp bursts of overall illumination to contrast with the subtly vibrating banks of fluorescents.

By this time, the group had begun to give occasional shows for their friends and the more curious among their classmates and the faculty. Shows were then, and largely are still, experiments open to an audience. They represent an opportunity for the group to measure their discoveries in a performance situation and to learn the reactions of a sensitive, but more objective, group of observers.

In the spring, Rumsey and the others were joined by Bill Crosby, and in the fall by Paul Fuge, '68, and Peter Kindlmann, a member of the faculty of the engineering and applied science department. Together, Kindlmann and Fuge conceived the electronic control system which has made possible shows of the scale and complexity now being presented as part of Project Argus.

Pulsa's control system, which Kindlmann calls a "hybrid" system because it includes many features of a computer, offers its operator extraordinary flexibility. Its circuitry allows the generation of complex voltage sequences variable in both frequency (corresponding to pitch in sound, pattern in light) and amplitude (corresponding to volume in sound, brightness in light). When a satisfactory effect is achieved, the signal can be fixed and programmed to repeat itself in any desired time interval. A staggering number of programs can run simultaneously and at any desired speed, and, moreover, each program can be routed to any or all of the light walls, which among them contain more than a thousand bulbs. As a consequence of sophisticated programming, the repetitions of the component programs go virtually unnoticed.

Contrary to many people's assumptions, the Pulsa installation is only incidentally a sculptural or architectural decoration of an environment. Pulsa, say its originators, is like music in the sense that its meaning is derived from its performance rather than from the static existence of notations or instruments. Also contrary to many reactions is the intended purpose of the reflective mylar panels. Their use stems not from a desire for mirror effects but for the translation of light into illusory secondary spaces.

The members of the group see Pulsa as an embodiment of their attitudes about art education and the relationship of art to the university. They feel that the university is the ideal center for continuing research and experimentation toward the creation of an accessible and genuinely public art. And they believe that such research and experimentation are by their very nature artistic statements.

For the future, they envision a community of artists within the university working together to conceive, create, and exhibit group efforts all in the same place. They describe their idea of collective creativity as "many people playing *one* machine instead of one person playing many machines." This community, they feel, will reverse the orientation of art education, and turn it away from the Bauhaus-derived emphasis on the solution of explicit, practical, circumscribed problems.

The group sees the university as an artistic environment, encouraging even further the trends toward self-structured and self-directed experiential education. "Things can happen here, in New Haven," says Clancy. "New Haven can become a center for art as well as New York; we can do everything we want as well here as there. The whole system of galleries as marketplaces is outdated."

"Because of the kind of people it can attract," says Rumsey, "and because of its connection with the technological and business communities and its accessibility to funds, the university is going to be the place where these things will happen."

In fact, members of Pulsa anticipate the day when art will be supported by industry as a joint artistic-commercial venture, based on the premise that artists' experiments with new materials will suggest new forms of commercial application. Pulsa's control center and the novel way the group invented for firing arrays of fluorescent lamps have already aroused interest and inquiries from industry.

Pulsa's hopes for its own future are adventurous. The artists see as their greatest single current problem the need to adapt their setup to fit the arbitrary demands of a place of performance. They envision developing an architectural system of components that will include its own space. The logical place for such a show is, of course, outdoors and they look forward eventually to monumental public installations. New materials and developments in technology, moving faster than ever before, will continue to play a significant role in the direction of their experiments. They see the future of Pulsa being as open-ended as the effect the present Pulsa show is designed to create.

J.B.K.

Facing page. Above, fluorescent lamps organized in racks for efficient capping. Below, a view from the third-floor balcony during the project's first public performance.

Following spread. Bill Crosby and Rumsey operating the controls during the first night's performance.



